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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,646	03/05/2002	Koji Ozawa	113197-025	9145

24573 7590 09/16/2005

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EXAMINER	
DONG, DALEI	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,646	OZAWA ET AL.	
	Examiner	Art Unit	
	Dalei Dong	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-5* is/are pending in the application.

4a) Of the above claim(s) *3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed August 10, 2005 has been entered and acknowledged by the Examiner.

Election/Restrictions

2. Claim 3 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected discharge beam estimating method, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 24, 2004.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,428,218 to Müssig in view of U.S. Patent No. 5,570,446 to Zhang.

Regarding to claim 4, Müssig discloses in Figure 1, a method for fusion splicing of an optical fiber using an optical fiber fusion splicer comprising a setting means (first holding device 2 and second holding device 4) for setting respective end surface of two optical fibers (optical conductors 1 and 3) that are to be spliced in order to abut against

each other (see column 3, lines 10-25), a heating means (two electrodes 6) for generating an arc discharge between two discharge electrodes and heating an abutment portion of the optical fibers (optical conductors 1 and 3) using discharge beam (see column 3, lines 61 to column 4, lines 2), and an image pickup means (sensor 8) for picking up an image of the discharge beam (see column 3, lines 26-39), the method comprising: measuring, from image signals obtained by the image pickup means (sensor 8), estimating a heating center of the arc discharge from the plurality of brightness distributions (see column 4, lines 13-46); and thereafter controlling the heating means such that a main arc discharge is generated and the abutment portion is heated by the discharge beam (see column 3, line 61 to column 4, line 2).

However, Müssig does not disclose a preliminary arc discharge is generated between the discharge electrode when no optical fibers have been placed in a discharge area brightness distribution on a plurality of lines that are set at different positions along a rectilinear direction between the discharge electrodes and run in a direction substantially at right angles to the rectilinear direction; and controlling the setting means such that the abutment portion of the two optical fibers is positioned in the heating center.

The Zhang reference teaches in Figures 1, 2 and 4, a method for fusion splicing an optical fiber, the method comprising: a preliminary are discharge is generated between the discharge electrodes (5) when no optical fiber have been placed in a discharge area (see column 6, lines 17-39; column 6, lines 53-67) brightness distribution on a plurality of lines that are set at different positions along a rectilinear direction between the discharge electrodes (6) and run in a direction substantially at right angles to the

rectilinear direction (see column 5, lines 21-42); and controlling the setting means (retainer 41) such that the abutment portion of the two optical fibers (1 and 1') is positioned in the heating center (see column 5, line 62 to column 6, line 16 and column 7, lines 1-23) for the purpose of obtaining a spliced fiber having a large tensile strength and a low attenuation.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the preliminary arc discharge method of Zhang for the splicing optical fiber of Müssig in order to obtain a spliced fiber having a large tensile strength and a low attenuation.

Regarding to claim 5, Zheng teaches in Figures 1, 2 and 4, the preliminary arc discharge in which the brightness distributions are estimated is performed with the current during the preliminary arc discharge smaller than the current during the main arc discharge in which the abutment portion is heated (see column 6, line 40 to column 7, line 23) and the motivation to combine is the same as above.

Response to Arguments

5. Applicant's arguments filed August 10, 2005 have been fully considered but they are not persuasive.

In response to Applicant's argument that the Müssig reference does not teach measuring from image signals obtained by image pick up means. The Examiner asserts

that the Müssig reference clearly teaches the use of color camera, and the intensity distribution can be stored in a wavelength-resolved fashion for accurate control of the discharge current (see column 4, lines 13-16). Second, the Müssig reference also teaches the estimating heating center of the arc discharge wherein the temperature distribution in the optical conductors will have a maximum in the region or the heating center (see column 4, lines 13-46). Third, the Müssig reference also teaches using the first and second holding members 2 and 4 to adjust the two ends of the optical conductors (see column 3, lines 10-25).

Also, in response to Applicant's argument that prior art of record fails to teach or suggest the claimed method for fusion splicing of an optical fiber using an optical fiber fusion. The Examiner agrees with the Applicant that the Müssig reference does not teach every claimed feature of the method for fusion splicing of an optical fiber. However, the Examiner disagrees with the Applicant that the Zheng reference fails to cure the deficiencies of the Müssig reference. The Examiner asserts that the Zheng reference teaches the method of fusion splicing of an optical fiber comprising separating the two ends of a fiber at a far distance (see column 6, lines 17-39) while an preliminary arc discharge 7 with a low current so that any melting or noticeable softening of the surface material will not occur (see column 6, lines 40-52) between the electrodes 5. Although, the preliminary arc discharge 7 can fling dirt and other particles from the electrodes 5, however, the purpose of the preliminary arc discharge 7 is not for cleaning of the electrodes 5. Instead, the preliminary arc discharge 7 is used to align the optical fiber ends with the camera 17 (see column 6, lines 53-67). Thus, the Examiner asserts that the

Zheng reference cures the deficiencies of the Müssig reference and maintains the rejection.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.D.
September 9, 2005

Joseph Williams
Primary Examiner
Art Unit 2879